Reviews and Book Notices

A Register of National Bibliography, with a Selection of the Chief Bibliographical Books and Articles Printed in Other Countries. By William Prideaux Courtney. 2 vols., 8vo. Pp. viii + 639. London: Archibald Constable & Co., 1905.

This book is not on geology, but it contains so much of value to geologists, mineralogists, and paleontologists that it seems well worth while to call attention to it. It is a bibliography of bibliographies, and though one might infer from the title that it was confined to British bibliographies, this is far from being the case. The author lives in London, and for some twenty years he worked more or less at this task, while during the last four years he devoted his time entirely to it. He has besides had the aid of many persons interested in special lines of bibliographic research, to say nothing of purely clerical work provided by himself.

The general titles are arranged in alphabetic order, and besides these there is at the end a full index covering seventy pages of closely printed names and subjects. Under the head of geology, besides the general bibliographies, there are given bibliographies of over one hundred countries, states, and special topics.

J. C. Branner.

The Dynamics of Faulting. By Ernest M. Anderson. (Transactions of the Edinburgh Geological Society, Vol. VIII, Part III [1905], pp. 387–403.)

By treating the subject in a mathematical and theoretical method the following conclusions are drawn:

Faults may be grouped roughly into three classes, known as reversed faults, normal faults, and wrench-planes.

a) Reversed faults and thrust-planes originate when the greatest pressure in the rock mass is horizontal, and the least pressure vertical. They "strike" in a direction perpendicular to that of the greatest pressure, and dip in either direction at angles of less than 45°.

b) Normal faults originate when the greatest pressure is vertical, and the least pressure in some horizontal direction. They "strike" in a direction perpendicular to that of least pressure, and dip in either direction at angles of more than 45°.

c) The third type of faults, to which the name of wrench-planes has been applied, originates when the greatest pressure is in one horizontal direction and the least pressure in another horizontal direction, necessarily at right angles to the first. They "strike" in two possible directions, forming acute angles which are bisected by the direction of greatest pressure; their hade is theoretically vertical. E. W. S.

The Copper Deposits of Missouri. By H. FOSTER BAIN AND E. O. ULRICH. (United States Geological Survey, Bulletin No. 267, 1905.) Pp. 52, 1 plate, 2 figures.

Copper is widely distributed in Missouri in the form of sulphides and carbonates, but the deposits are not large, and only four mines have found it in workable amounts. The total value of copper so far produced has been variously estimated at from $20,000 to $50,000. The ores are believed to have been widely disseminated in crystalline and sedimentary rocks, and to have been concentrated by underground waters. The copper seems related to original shallow water conditions. It also shows a preference for certain horizons. This is believed to be due to unequal distribution at the time the rocks were formed. E. W. S.

The Geology of the New England Plateau, with Special Reference to the Granites of Northern New England (New South Wales). Part II, "General Geology;" Part III, "The Genesis of Ore Deposits." By E. C. ANDREWS, B.A. (Extract from Records of the Geological Survey of New South Wales, Vol. VIII [1905].) Pp. 45, 11 figures, 1 plate.

These papers treat of the geology of New South Wales; the occurrence of gold, wolfram, tin, monzite, bismuth, and other ores; and the close relation between their occurrence and certain acid intrusives. E. W. S.

The Geology of the Diamond and Carbonado Washings of Bahia, Brazil. By ORVILLE A. DERBY. Translated by J.C. BRANNER.

The diamonds occur in various formations, but principally associated with a heavy conglomerate, 6–10^{m} thick. About 250^{m} of sandstone lie above this conglomerate, and an equal thickness underlies it. Where diamonds occur in other formations in the region, they are thought to have been transported there from the conglomerate. The structure is Appalachian in type, and there has been much faulting and folding and erosion. The age of the conglomerate is unknown, but undisturbed Cretaceous sandstone is found near the folded conglomerate. E. W. S.

The University Training of Engineers in Economic Geology. By J. C. BRANNER. (Reprint from *Economic Geology*, Vol. I, December–January, 1906, pp. 289–94.)

This paper discusses the training necessary for success in economic geology. The author points out the desirability of considerable preliminary study of other subjects, and the necessity of training in pure geology.

E. W. S.

Red Beds of Southwestern Colorado and Their Correlation. By WHITMAN CROSS AND ERNEST HOWE. (Bulletin of the Geological Society of America, Vol. XVI [December, 1905]. Pp. 447–98, Plates 82–85.)

A marked unconformity occurs in the Red Beds of this area, and several photographs of it appear in this article. The formation above the break is classified as Triassic on the basis of vertebrate fossils; that below is assigned to the Permian. E. W. S.

Taconic Physiography. By T. NELSON DALE. (U. S. Geological Survey, Bulletin No. 272, 1905.) Pp. 52, 14 plates, 3 figures.

There have been three periods of folding in the region—first, at the close of the Lower Cambrian; second, at the close of the Ordovician; and third, in Devonian or Carboniferous time. The topography is the result of the erosion of rocks which vary in composition and structure. The lakes and some other features are due to glaciation. E. W. S.

Underground Waters of Eastern United States. By MYRON L. FULLER. (Water Supply and Irrigation, Paper No. 114, U. S. Geological Survey, 1905.) Pp. 272, 18 plates, 40 figures.

This report is prepared primarily for drillers and treats of the occurrence of underground waters. It is a compilation of material from numerous local geologists. E. W. S.

Fire Tests of Some New York Building Stones. By W. E. MCCOURT. (New York State Museum, Bulletin No. 100.) Albany, 1906. Pp. 38, 26 plates, and index.

The purpose of testing the building stones was to acquire definite information regarding their fire-resisting qualities. The rupturing caused by heat, with slow, or with sudden cooling, varies considerably with different rocks. The order of the refractoriness of rocks tested is: (1) sandstone, (2) fine-grained granite, (3) limestone, (4) coarse-grained granite, (5) gneiss, and (6) marble. E. W. S.

Contributions to the Hydrology of Eastern United States, 1903. By MYRON L. FULLER. (Water Supply and Irrigation, Paper No. 102, U. S. Geological Survey, 1904.) Pp. 512.

This paper covers the hydrologic work done in the eastern United States in 1903. The statistics are arranged by states. The information was collected by many local geologists, and compiled and prepared by Mr. Fuller.

E. W. S.

The Sources of Water Supply in Wisconsin. By WILLIAM GRAY KIRCHOFFER, C.E. (Bulletin of the University of Wisconsin, No. 106.) Pp. 113, 3 plates, 3 diagrams, and 21 tables and index.

The bulletin is a compilation of data regarding the water used by cities and villages in Wisconsin, together with many interesting observations thereon. The sources are classified, and the factor entering into occurrence and use are discussed.

E. W. S.

The Geology of the New Hebrides. By D. MAWSON, B.E., B.Sc., Lecturer in Mineralogy and Petrology at the University of Adelaide. Pp. 85, 14 plates, 7 figures. (Proceedings of the Linnean Society of New South Wales, Part III, October, 1905.)

Little has been known of the New Hebrides because of the hostility of the natives and the prevalence of malaria. The group of islands was developed as a fold in the Miocene, and intrusion and extrusion of andesitic lava accompanied the folding. About Middle Pliocene there was renewed volcanic activity along a new line, and this has continued to the present. This later flow is basic, and was probably immediately preceded by faulting. Recent uplift has carried coral reefs up to 2,000 feet. These are underlain by tuffaceous beds. The uplift is one-sided, being less on the east side, where the centers of eruption are.

Biological evidence points to connection of the islands with other land masses early in their history.

The author points out that the South Pacific Islands are lined along great fold-chains, concentric with Australia, and puts the New Hebrides, Sumatra, New Caledonia, and New Zealand in one of these chains. The discontinuity of the land is referred to cross-faulting, incident to folding. He believes that the land area was much larger and more continuous in the early Tertiary, and that the breaking up began then. From evidence of coral reefs, it appears that in these and many other islands of the South Pacific the first movement was true folding, and this was followed by horizontal uplift. The petrology, paleontology, and other features of the islands are treated in some detail.

E. W. S.